

REMARKS

The Applicants thank the Examiner for the thorough consideration given the present application. Claims 1-47 were previously cancelled. Claims 48-69 are pending. Claim 60 is amended. Claims 1, 68, and 69 are independent. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Examiner Interview

If, during further examination of the present application, any further discussion with the Applicants' Representative would advance the prosecution of the present application, the Examiner is encouraged to contact Carl T. Thomsen, at 1-703-208-4030 (direct line) at her convenience.

Drawings

The Examiner has objected to the drawings alleging that "sensing means" and "control means" of claim 60 and "motion control means" of claim 63 are not shown in the drawings. In response, the Applicants point out that

- "Sensing means" in claim 60 is the sensor 142 shown in FIG. 18;
- "Control means" has been deleted from claim 60; and
- "Motion control means" in claim 63 is shown in FIG. 19, the switch 166 controlling the hydro-pneumatic springs 152, 154 in response to a turn angle detected by sensor 142 corresponding to roll angle.

Accordingly, the objection to the drawings is now moot.

Claim for Priority

It is gratefully appreciated that the Examiner has acknowledged the Applicants' claim for foreign priority.

Information Disclosure Citation

The Applicants thank the Examiner for considering the reference supplied with the Information Disclosure Statement filed March 31, 2006 and June 7, 2007, and for providing the Applicants with initialed copies of the PTO/SB/08 forms filed therewith.

Rejections Under 35 U.S.C. §102(b)

Claims 48-49, 58, 68 were rejected under 35 USC 102(b) as being anticipated by Kingston (US2003/0001426).

This rejection is respectfully traversed.

Kingston does not have the feature of independent claim 48 of the present invention, as follows: "the front suspension assembly includes an independent suspension system for mounting the pair of front wheels on the front chassis of the front tractor part."

There is no mention or illustration anywhere in the Kingston disclosure of any type of suspension either in the description or the drawings. Fig. 1 in Kingston does not show how the second wheel axle (16) is attached to the chassis. Throughout the Kingston description, the front axle of the truck is referred to as "the second wheel axle (16)." If anything, this would suggest that the second wheel axle (16) is a beam axle. This view is further supported

by the illustrated in Fig. 3 in which the second wheel axle (16) is shown schematically as a beam axle.

Kingston is solely concerned with a drive transmission comprising a mechanical drive transmission for rear wheels and a hydrostatic drive transmission for the front wheels of the truck. The object of the Kingston Patent Application is to address the problem of minimising wear and stress on the transmission of the truck under different operating conditions.

Kingston makes no mention of any kind of suspension and does not disclose or suggest the feature in claim 49 of: "said front suspension assembly is an independent suspension module mounted on the front chassis."

It will also be noted that claim 49 is dependent on independent claim 48 and is thus patentably distinguished from the Kingston disclosure for the reasons given above.

Claim 58 is dependent on independent claim 48, and thus is patentably distinguished from Kingston for the reasons given above.

With regard to independent claim 68, the same comments made above regarding independent claim 48 apply and thus this claim is also patentably distinguished from Kingston.

At least for the reasons explained above, the Applicants respectfully submit that the combination of elements as set forth in independent claim 48 and 68 is not disclosed or made obvious by the prior art of record, including Kingston.

Rejections Under 35 U.S.C. §103(a)

Claims 50-57, 69 were rejected under 35 USC 103(a) as being unpatentable over Kingston (US2003/0001426) in view of Schmitz et al (US 6,105,984).

Claims 50-57 are dependent on independent claim 48 and thus are patentably distinguished from the prior art for the reasons given above.

With regard to independent claim 69, the comments made above with regard to independent claim 48 apply here also.

Further, it is submitted that it would not be obvious to include the independent suspension of Schmitz in the dump truck vehicle of Kingston. Neither document discloses or suggests such a combination. Independent suspensions and articulated dump trucks are old technologies and prior to the present invention there has been no suggestion to mount an independent front suspension in an articulated dump truck.

The use of an independent front suspension with soft long travel springs on an articulated dump truck in which there is unlimited roll freedom between the front and the rear frames is not obvious to a person of ordinary skill in the art. In fact it is counterintuitive and the immediate instinct of one versed in the art is that the system will be liable to serious roll instability due to the complete torsional freedom between the front and rear sections of the vehicle which precludes any transfer of roll stiffness from the stiffer rear suspension to the softer front suspension. That such instability does not in fact occur has been a surprise.

Also, prior to the present invention it was not obvious that mounting an independent front suspension in an articulated dump truck would confer sufficient advantages to outweigh

the extra cost relative to the conventional suspensions used in articulated dump trucks. Nor was it obvious prior to the present invention that a front independent suspension could be packaged in a manner sufficiently compact and suitable for installation and use in an articulated dump truck.

The independent front suspension arrangement in the articulated dump truck of the present invention has proven unexpectedly beneficial in mitigating the affect of lateral vibrations on the cab (and hence the driver) of the vehicle during normal operation of the vehicle on rough terrain. This allows the vehicle to safely operate at greater speeds on such rough terrain than conventional articulated dump trucks. Thus, advantageously productivity can be considerably improved.

The Examiner has suggested that the motivation for combining Schmitz with Kingston would be to limit displacement impact between the tractor and trailer when overcoming obstacles. However, the independent suspension has no influence on the relative displacement of the tractor and trailer as compared to a conventional non-independent beam axle suspension of similar rates.

The same comments made at item 8 above apply equally with regard to claims 51-53.

Above comments apply here also. Further, the articulated dump truck is a low speed vehicle compared to that of Schmitz and the independent suspension does not confer "additional control of the vehicle" as compared to a beam axle vehicle of similar suspension movement.

Regarding claim 54 a suspension system for use on all terrains could equally be provided by a non-independent suspension.

Regarding claims 55 to 57 and 69 – see the comments made above regarding the combination of Kingston with Schmitz.

Rejections Under 35 U.S.C. §103(a)

Claims 59-67 were rejected under 35 USC 103(a) as being unpatentable over Kingston (US2003/0001426) in view of Barron (US 7,226,056).

These claims are all dependent on independent claim 48 and thus are patentably distinguished from the prior art for the reasons given above.

There is no articulated steering system in Barron. Instead, what is illustrated is a schematic of an automobile with front and rear suspensions and a conventional steering arm being illustrated on the front wheels. There is no articulation steering joint in Barron. The vehicle illustrated in Fig. 1 and Fig. 11 show a conventional steering arm and knuckle supporting wheels (22) and (28). The Electronic Control Unit (70) does not apportion steering action between the front wheels and the articulation joint. There is no articulated steering joint in this vehicle to which steering action might be apportioned. As stated by Barron “an Electronic Control Unit (ECU) 70 is provided to process inputs from one or more wheel speed sensors (72), a lateral accelerometer sensor (accelerometer) and a steering angle sensor (76).” In operation, the ECU controls the actuator by locking and unlocking it in accordance with pre-programmed responses to the combination of inputs from sensors (72,

74) and (76). It has nothing to do with apportioning steering action. Its sole function is to control the behaviour of the anti-roll lock mechanisms (12, 21, 212 and 221).

At least for the reasons explained above, the Applicants respectfully submit that the combination of elements as set forth in each of independent claim 48, 68, and 69, and the claims depending therefrom are not disclosed or made obvious by the prior art of record, including Kingston, Schmitz et al. and Barron.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §102(b) and 103(a) are respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject claims, but merely to show the state of the art, no comment need be made with respect thereto.

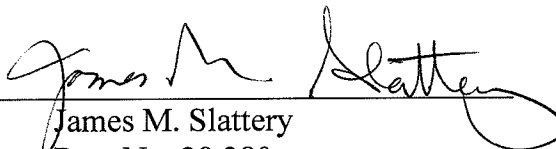
All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 208-4030(direct line).

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

Date: April 8, 2009

By 
James M. Slattery
Reg. No. 28,380

BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road, Suite 100E
P. O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

JMS:CTT:ktp 